

217/782-2113

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT

PERMITTEE

Corn Belt Energy Corporation  
Attn: Ron Hopkins  
One Energy Way  
Bloomington, Illinois 61702

Application No.: 04090075

I.D. No.: 113065AAI

Applicant's Designation: GENERATORS

Date Received: September 27, 2004

Subject: Generator

Date Issued:

Expiration Date:

Location: Bloomington Normal Water Reclamation District, 16041 East 700 North  
East Road, Heyworth, McLean County

Permit is hereby granted to the above-designated Permittee to OPERATE emission source(s) and/or air pollution control equipment consisting of an electric power plant with one 1.825 MW diesel engine as described in the above-referenced application. This permit is subject to standard conditions attached hereto and the following special condition(s):

- 1a. This Federally Enforceable State Operating Permit (FESOP) is issued to limit the emissions of air pollutants from the source to less than major source thresholds (i.e., less than 100 tons per year of nitrogen oxides (NO<sub>x</sub>)), As a result, the source is excluded from the requirements to obtain a Clean Air Act Permit Program (CAAPP) permit. The maximum emissions of this source, as limited by the conditions of this permit are described in Attachment A.
  - b. Prior to issuance, a draft of this permit has undergone a public notice and comment period.
  - c. This permit supersedes all operating permit(s) for this location.
- 2a. No person shall cause or allow the emission of smoke or other particulate matter, with an opacity greater than 30 percent, into the atmosphere from any emission unit, pursuant to 35 Ill. Adm. Code 212.123(a), except as allowed by 35 Ill. Adm. Code 212.123(b) and 212.124.
    - b. The emission of smoke or other particulate matter from any such emission unit may have an opacity greater than 30 percent but not greater than 60 percent for a period or periods aggregating 8 minutes in any 60 minute period provided that such opaque emissions permitted during any 60 minute period shall occur from only one such emission unit located within a 305 m (1000 ft) radius from the center point of any other such emission unit owned or operated by such person, and provided further that such opaque emissions permitted from each such emission unit shall be limited to 3 times in any 24 hour period, pursuant to 35 Ill. Adm. Code 212.123(b).

3. No person shall cause or allow the emission of sulfur dioxide into the atmosphere from any process emission unit to exceed 2000 ppm, pursuant to 35 Ill. Adm. Code 214.301.
- 4a. The Permittee shall not utilize distillate fuel oil (Grades No. 1 and 2) at this source with a sulfur content greater than the larger of the following two values:
  - i. 0.28 weight percent, or
  - ii. The wt. percent given by the formula: Maximum wt. percent sulfur = (0.00015) x (Gross heating value of oil, Btu/lb).
- b. Organic liquid by-products or waste materials shall not be used in these fuel combustion emission sources.
- c. The Illinois EPA shall be allowed to sample all fuels stored at the above location.
- 5a. Total emissions and operation for all the diesel engine shall not exceed the following limits:

	Diesel Fuel Usage (Each Unit)	
	(Gallons/Month)	(Gallons/Year)
	70,950	70,950
<u>Pollutant</u>	<u>Emission Factors</u> (Lbs/1,000 Gal)	<u>Emissions</u> (Tons/Mo)      (Tons/Yr)
Nitrogen Oxides (NO <sub>x</sub> )	448.0	15.90      15.90
Carbon Monoxide (CO)	119.0	4.22      4.22
Sulfur Dioxide (SO <sub>2</sub> )	7.1	0.25      0.25
Particulate Matter (PM)	14.0	0.50      0.50
Volatile Organic Material (VOM)	12.6	0.45      0.45

These limits are based on maximum fuel usage a heat content of 140,000 Btu/gallon, a maximum sulfur content of 0.05 weight percent, and standard emission factors Table 3.4-1, AP-42, Volume I, Fifth Edition, Supplement B, October 1996).

- b. Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total).
- 6a. The Permittee shall maintain monthly records of the following items:
  - i. Hours of operation for the unit including startup and shutdown when fuel is being fired in the unit;
  - ii. Fuel usage for the engine (gallons per month);
  - iii. Heat content of the fuel oil burned (mmBtu/gallon);

- iv. Fuel analysis sheets indicating sulfur content for each shipment or purchase of fuel; and
  - v. Monthly and annual emissions of NO<sub>x</sub>, CO, PM, SO<sub>2</sub>, and VOM with supporting calculations (tons/month and tons/year).
- b. The Permittee shall keep a maintenance and repair log for the engine, listing significant activities performed with date.
- c. The Permittee shall maintain records for each startup of an affected engine, which at minimum shall include the following information:
- i. Date and time of startup;
  - ii. Whether startup is "remote", i.e., initiated by off-site personnel or automated procedures;
  - iii. Whether operating personnel for the engine or air environmental staff are on site during startup, even if startup is remote; and
  - iv. A description of startup, if operating problems are identified during the startup.
- d. The Permittee shall maintain records that include as a minimum for each malfunction or breakdown of an engine during which operation continued and opacity may have exceeded 30 percent as allowed by 35 IAC 212.123.
- i. Date, time and duration of malfunction or breakdown;
  - ii. Description of malfunction or breakdown; and
  - iii. Whether operating personnel for the engine or air environmental staff are on site during malfunction or breakdown.
- e. Records for each occurrence when excess opacity was observed during startup or malfunction or breakdown of a unit, including:
- i. Date and duration of excess opacity, including start time and end time excess opacity occurred during startup;
  - ii. If normal operation was not achieved within one hour of initiating startup, an explanation why normal operation could not be achieved in one hour;
  - iii. If excess opacity occurred during malfunction or breakdown, an explanation why the unit could not be immediately shutdown; and
  - iv. An explanation of the cause of the excess opacity and documentation that established procedures for minimizing emissions were followed.

- f. All records and logs required by this permit shall be retained at a readily accessible location at the source for at least five years from the date of entry and shall be made available for inspection and copying by the Illinois EPA and USEPA upon request. Any records retained in an electronic format (e.g., computer) shall be capable of being retrieved and printed on paper during normal source office hours so as to be able to respond to an Illinois EPA request for records during the course of a source inspection.
- 7. If there is an exceedance of the requirements of this permit as determined by the records required by this permit, the Permittee shall submit a report to the Illinois EPA's Compliance Section in Springfield, Illinois within 30 days after the exceedance. The report shall include the emissions released in accordance with the recordkeeping requirements, a copy of the relevant records, a description of the exceedances or violation, and efforts to reduce emissions and future occurrences.
- 8a. Two (2) copies of required reports and notifications concerning equipment operation or repairs, performance testing or a continuous monitoring system shall be sent to:
  - i. Illinois EPA - Air Compliance Section  
  
Illinois Environmental Protection Agency  
Division of Air Pollution Control  
Compliance Section (#40)  
P.O. Box 19276  
Springfield, Illinois 62794-9276
  - ii. Illinois EPA - Air Regional Field Office  
  
Illinois Environmental Protection Agency  
Division of Air Pollution Control - Region 3  
2009 Mall Street  
Collinsville, Illinois 62234
- b. Unless otherwise specified in the particular provision of this permit, reports shall be sent to the Illinois EPA - Air Compliance Section with a copy sent to the Illinois EPA - Air Regional Field Office.

If you have any questions on this permit, please contact George Kennedy at 217/782-2113.

Donald E. Sutton, P.E.  
Manager, Permit Section  
Division of Air Pollution Control

DES:GMK:psj

cc: Illinois EPA, FOS - Region 3  
Lotus Notes

Attachment A - Emissions Summary

This attachment provides a summary of the maximum emissions of the generator operating in compliance with the requirements of this permit. In preparing this summary, the Illinois EPA used the annual operating scenario, which results in maximum emissions from the source. These maximum emissions from the generators utilize annual fuel usage of 70,950 gallons. The resulting maximum emissions are below the threshold levels (e.g., 100 tons/year for NO<sub>x</sub>) at which this source would be considered a major source for purposes of the Clean Air Act Permit Program. Actual emissions from this source will be less than predicted in this summary to the extent that the fuel usage is less than allowed in this permit.

<u>Emission Unit</u>	E M I S S I O N S (Tons/Year)				
	<u>NO<sub>x</sub></u>	<u>CO</u>	<u>SO<sub>2</sub></u>	<u>PM</u>	<u>VOM</u>
1 Diesel Engine	17.84	4.74	0.28	0.56	0.50

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## PROJECT SUMMARY

### I. INTRODUCTION

The Corn Belt Energy Corporation at its Bloomington Normal Water Reclamation District has submitted an application for a federally enforceable state operating permit covering an electric power generator. This permit prevents the site from being classified as a major source of emissions under the Clean Air Act. Therefore, the facility does not have to obtain a federal permit under the Clean Air Act Permit Program. The permit will contain limitations and accompanying recordkeeping and reporting requirements to assure that the site is operated as a non-major source.

### II. SOURCE DESCRIPTION

The generator is used by the facility to generate electrical power emergency backup and peak-sharing which usually occurs during the summer months. The generator consists of a reciprocating engine which drives an electric generator by means of a rotating shaft. The reciprocating engine is driven by the combustion of diesel fuel.

### II. EMISSIONS

Air pollutants are generated when the reciprocating engine is in operation. These emissions occur from the combustion of diesel fuel and is exhausted through a pipe to the atmosphere.

The primary air pollutants from the reciprocating engines are nitrogen oxide ( $\text{NO}_x$ ), carbon monoxide (CO), volatile organic material (VOM), sulfur dioxide ( $\text{SO}_2$ ), and particulate matter (PM).

$\text{NO}_x$  is formed thermally by the combination of oxygen and nitrogen in the air at the temperature at which the fuel is burned. CO, VOM, and PM are formed from incomplete combustion of the fuel. Emissions of  $\text{SO}_2$  are found in varying amounts from the combustion of diesel fuel, depending on the sulfur content of the oil.

The proposed permit includes limitations that restrict the potential annual emissions of  $\text{NO}_x$ , CO, VOM, and  $\text{SO}_2$  to levels below major source thresholds.

### IV. APPLICABLE EMISSION STANDARDS

All emission sources in Illinois must comply with the Illinois Pollution Control Board's emission standards. The Board's emission standards represent the basic requirements for sources in Illinois. The Board has standards for sources of particulate matter, volatile organic material, and sulfur dioxide for reciprocating engines. This site readily complies with those Board standards.

V. PROPOSED PERMIT

The conditions of the proposed permit contain limitations and requirements to assure that this site will be operated as a non-major source. The permit establishes limitations on the amount of fuel which may be burned.

The permit conditions also establish appropriate compliance procedures, including record keeping requirements and reporting requirements. The city must carry out these procedures on a continual basis to demonstrate that the generators are operating within the limitations established by the permit.

VI. REQUEST FOR COMMENTS

It is the Illinois EPA's preliminary determination that these generators meet all applicable state and federal air pollution control requirements, subject to the conditions of the draft permit. The Illinois EPA is therefore proposing to issue a permit with federally enforceable limits for the above referenced equipment to the facility.

Comments are requested on this proposed action by the Illinois EPA and the proposed conditions on the draft permit. Comments, questions, and information requests should be directed to the Illinois Environmental Protection Agency, 1021 North Grand Avenue, East, P.O. Box 19506, Springfield, Illinois, 62794-9506: Phone 217/782-2113. If there is significant public interest in this matter, the Illinois EPA may hold a public hearing in accordance with 35 Ill. Adm. Code Part 166.